

## **Spatially Extended Wind Emission in the Massive Binary Systems VV Cep and KQ Pup**

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VV Cep and KQ Pup are binary systems consisting of M supergiant primaries with B main-sequence companions which orbit within the extensive M supergiant winds. VV Cep undergoes total eclipses and was observed with the HST/STIS Spectrograph at several epochs which spanned total eclipse through "chromospheric eclipse" as lines from ions like Fe I weakened and disappeared through first quadrature. KQ Pup comes close to eclipsing its hot companion and was observed to be in chromospheric eclipse (showing weak absorption from Fe I in the M supergiant's chromosphere) by STIS in October 1999. Two-dimensional reprocessing of the STIS echelle spectra has revealed spatially extended emission in all observations of these two systems. Emission arising from gas thought to be associated with the hot component shows spatial extension consistent with the STIS spatial point spread function. The spatially extended flux seen outside total eclipse arises from emission in transitions expected to be observed from the winds of cool supergiants. VV Cep was observed at enough epochs to map out radial velocity structure within the wind, and it is consistent with model predictions for wind flow in a binary system in which the wind outflow is comparable with the M supergiant's orbital velocity. Spatially resolved wind and wind interaction structures of these two stars and of Eta Carinae reinforce the need for imaging spectroscopy and added capabilities of integral field units for mapping these complex interacting systems.